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This single chapter on leading sectors for U.S. exports and investment is excerpted from the 2004 (September 2004 Update) Country Commercial Guide for Jordan. The full text of the report is also available on this website.

CHAPTER 5. LEADING SECTORS FOR U.S. EXPORTS AND INVESTMENT

Best Prospects for Non-Agricultural Goods and Services

Jordan's industry sectors and sub-sectors that offer the most promising export opportunities for American firms are described below. Figures below are unofficial estimates, since specific statistical information regarding the size of the market for various industry sectors and sub-industry sectors in Jordan is very difficult to obtain or is simply not available.

Building Material And Products & Construction Equipment & Services

The growing building and construction sector in Jordan offers opportunities to U.S. firms given the growth in residential, office building, hotel and resort construction in Jordan. This trend favors US exporters of engineering services, building products and accessories in particular. There are over 15 five-star and four-star hotels under construction currently in Jordan with investment ranging between \$20 million and \$350 million. The two main areas where development is taking place in Jordan's hotel and leisure sector are the Dead Sea and Aqaba. A current real estate boom in single-family houses and apartment buildings, particularly in the middle to upper segments of the market, represents interesting opportunities for new construction and finishing techniques and products to the Jordanian market.

Infrastructure development, particularly in water, wastewater, and sewer rehabilitation infrastructure, energy (expansion of electrical networks, expansion and upgrade of petroleum refinery), offer US firms further opportunities in the engineering services sector. (See also Environmental Technologies Prospects below.) Several fertilizer and chemical processing plants are underway in Jordan.

Energy (Oil & Gas And Electrical Power)

There are several important opportunities opening up in the energy sector in Jordan in 2004. The Jordanian Government expects considerable investment for primary energy, oil products and electricity in the country, with the largest portions going towards an oil refinery upgrade and expansion, power generation, natural gas pipeline and power transmission.

Jordan has no significant oil resource of its own, and must rely on imported oil for all of its needs. Jordan's only refinery, the Jordan Petroleum Refinery Co. (JoPetrol), expects to open a \$600 million upgrade and expansion tender in 2004. This project presents a large opportunity for U.S. engineering services firms and U.S. suppliers of refinery equipment and services.

The electricity sector in Jordan is being privatized (see "Privatization" section below for details). Jordan's long-term electricity demand will grow by 5% per year for the next ten years. The initial phase of introducing Egyptian natural gas began in 2003, and will introduce new investment opportunities in modernizing and transforming Jordan's antiquated power stations to operate on gas. Best sales prospects

include: distribution transformers, insulators, overhead conductor switchboards, underground cables and gas turbines, and engineering and consulting services.

Environmental, Pollution Control/Water Resource Equipment & Services

The market for environmental technology in Jordan is primarily focused on water - its conservation and management at all levels of use. But U.S. environmental technologies firms may also find opportunities in municipal, healthcare, and hazardous waste collection treatment, and disposal; waste recycling; pollution control and remediation; and environmental consulting.

Water: Jordan is one of the most water-poor countries in the Middle East. In 2003, water demand reached 561 million cubic meters (MCM). Important opportunities exist for residential water saving devices, recycling of processed water and reuse of treated effluent in industry and agriculture, and purification systems in Jordan.

USAID and other international donors contribute significantly to a \$2.5 billion water sector investment program for Jordan. This program focuses primarily on water supply issues (collection, storage and transport), municipal wastewater treatment and reuse, industrial wastewater treatment, water purification, and conservation. The program promises to yield more than 50 major projects for international contractors in the next 10 years.

An even more ambitious project is the recently revived Red-Dead Sea Conveyance Canal Project. This project calls for the transfer of water from the Red Sea to the Dead Sea, and includes installing desalination and hydroelectric capacity in the West Bank/Gaza, Israel and Jordan. This project aims to increase water availability to Jordan, Israel, and West Bank/Gaza by 850 mcm annually and generate 550 megawatts of power. The World Bank is expected to fund a \$10 million feasibility study on the Red-Dead Project.

Wastewater: Wastewater is an important component of the Kingdom's water resources. Currently, sewerage services are available to around 70% of the urban population.

Solid Waste: Solid waste management is a growing concern in Jordan. The collection system is adequate in urban centers, but services tend to be poor in rural areas and small towns. Opportunities may also exist for the management and rehabilitation of existing waste disposal sites. Other projects in this sector include on-site neutralization and treatment facilities at local industries.

Land: Land degradation in Jordan is caused by unplanned urban expansion, desertification due to overgrazing, rising soil salinity due to inefficient irrigation techniques, deforestation, mining spoils, and the absence of land use planning. Soil damage caused by saline intrusion in coastal areas, or by over-irrigation, or irrigation using high-saline water, is harming crop production in several areas. Remediation technology and education on "best practices" offer opportunities for U.S. firms to help address these problems.

Environmental Consulting: By law all substantial future commercial development requires an environmental impact assessment and most donors require EIAs for project funding. With the tourism and infrastructure sectors expected to expand, this will be a growing market. To date this has also been a competitive market, with the best approach likely to be through partnership with local firms. In addition

to environmental consultants and engineers, there is demand for laboratory, research and water resource monitoring programs.

Healthcare/Medical Services and Equipment

Jordan's total expenditure on health, based on the latest available statistics, is estimated at \$325 million, around 9% of total GDP. \$168 million of this constitutes government expenditure on public health. The average per capita spending is around \$1,657 per year. USAID and WHO are major players, among other donors, in funding upgrades in healthcare services and supporting reforms to Jordan's health care system.

Healthcare/medical services: Jordan's health care system is regarded as one of the best in the region. Jordan is striving to become a medical hub for the Middle East by offering relatively high-quality care at comparatively inexpensive rates. The country is a leader in cardiology and cardiovascular surgery, laparoendoscopic surgery, kidney transplantation, ophthalmology, neurosurgery, plastic surgery, oncology and many other areas. Another growth area in Jordan is aesthetic procedures and related products.

Primary health care sector reforms will include renovating and adding medical diagnostic devices and therapeutic equipment; improving the quality of health care and hospital services; upgrading hospital infrastructure; and developing and implementing health information systems.

Medical equipment: Demand for medical equipment and services should increase during the next few years with the increase in the number of government and privately owned hospitals; new equipment for hospitals under construction; renovated equipment to replace existing equipment in functioning facilities; upgrading clinics and health care structures; expanding health insurance coverage; and shifting from older conventional methods to modern treatment methods.

U.S. companies will remain competitive in the high-end of the market as technology advances. U.S. products, respected in Jordan for their high quality, are increasingly sought after due to the drop in the dollar vis a vis the euro. Furthermore, local agents for American companies provide quality maintenance and parts, and the after-sale support is often seen as exceptional.

Pharmaceuticals: Jordan's pharmaceutical industry is its second largest exporting industry. This sector has modern plants, established regional marketing channels and a skilled, low-cost workforce. Local production grew by 15% in 2003. Despite increasing local production, the demand for imported, patented medicines is expected to increase. US pharmaceutical exports to Jordan totaled \$9 million in 2003, and market opportunities may increase for US products versus European products due to the appreciation of the euro against the US dollar. There are opportunities for U.S. firms to explore licensing agreements and joint ventures with Jordanian companies.

ICT, Computing/Networking

Information Technology (IT) is one of the growth sectors in Jordan's economy. Opportunities exist in the electronic service areas of banking, commerce, governance, health, learning, accounting, information security, and most recently 3D animation.

The Government of Jordan spends millions of dollars on hardware, software and e-solutions per year. The annual growth rate in the market has ranged from 15-30% per annum over the past few years. In 2003, US IT exports to Jordan totalled \$248.5 million.

Jordan has almost 400,000 Internet users; and eight operating ISP's. Five other companies hold licenses for ISP operations. The PC penetration rate is still low, between 5-6%; however ISDN, ADSL broadband lines, frame-relay, fiber and ATM are available commercially.

Jordan has recently expanded IT centers and created a government-wide portal, a VPN, an e-government fast track program for services, e-business, and intra-government operations. Jordan's 3,000 schools will be connected by 2007 and the country's eight universities will be connected by the end of 2004. Also, the Kingdom's 130 post offices are scheduled to offer online facilities to access a range of government services.

Security and Safety Equipment

The Jordanian Government is steadfast in its efforts to maintain internal security amid unrest in neighboring countries. Local business and government contacts confirm that there will be an increase in demand over the next few years for high-quality security equipment in several major product areas including surveillance, detection, and access control.

Currently commercial sales for security sector products and services originate from five separate Jordanian Government entities in the following order of magnitude: the Public Security Directorate, the Civil Defense Department (both within the Ministry of Interior), the General Intelligence Department, the Special Operation Command, and the Airport Security Unit (within the Jordanian Armed Forces). These five entities frequently work together in maintaining security in Jordan, and therefore commercial sales will often involve more than one entity. CS/Amman maintains good contact with reputable Jordanian firms in the security sector who could act as agents and distributors for American security sector firms. However, virtually no commercial transactions of security equipment or services of any kind occur without the involvement of at least one of the above Jordanian Government bodies.

It should be noted that U.S. security sector firms must apply for and obtain export licenses to sell goods on the U.S. Government commodity controlled list to Jordan. For further information, please consult the U.S. Department of Homeland Security's Bureau of Industrial Security at www.bis.doc.gov.

The Jordanian Government is currently implementing the C4ISR project, which is designed to provide an integrated security and defense system for Jordan through the Jordanian Armed Forces. There is also an imminent need for internal surveillance and interception equipment, as well as airport scanning equipment and hazardous material/weapons detectors for trucks at ports.

In the short term, CS/Amman expects opportunities for U.S. firms in the areas of comprehensive urban surveillance and monitoring, and CCTV and building access control equipment and strategies. There will also be a growing need for eye and hand biometrics. The major long-term security project in Jordan is the Border Security Project. This large project will integrate thermal imaging and detection equipment, communications, and physical barriers along the borders with Jordan's neighbors.

Telecommunications Services/Equipment

Jordan's telecommunications sector offers ample opportunities for U.S. companies. Investment opportunities exist in several operating units of Jordan Telecom for fixed lines. U.S. firms may also find equipment sales opportunities in Jordan's growing mobile phone sub-sector. Jordan's

telecommunications services and equipment market grew to around \$70 million in 2004. Jordan is aiming for a 50% mobile telephone penetration rate by 2013.

Jordan Telecom is the only operator of fixed lines, although the monopoly ends on December 31, 2004. A public consultation is currently underway on the licensing regime that will apply in the liberalized environment. Out of a population of 5.6 million, there are about 680,000 fixed line subscribers in Jordan, a figure, which is growing at 2-3% per year on average. Significant mobile substitution has cut into growth of fixed lines. France Telecom owns a significant minority share of Jordan Telecom and controls the firm's day-to-day management. In addition to fixed line service, Jordan Telecom also provides mobile service (below), Internet service and content integration through wholly-owned subsidiaries.

Jordan seeks investors for services currently provided on a monopoly basis by Jordan Telecom, including international bandwidth provision and international voice gateways. The country is also interested in finding investors for international call centers and the establishment of alternate links connecting Jordan with Europe and beyond. The only existing cable link is through a Flag landing in Aqaba. It should be noted that 100% foreign ownership is permitted in Jordan.

There are currently around 1.4 million mobile phone subscribers in Jordan, and experts expect this number to increase significantly over the next several years. There are currently two mobile phone operators in Jordan, MobileCom (a subsidiary of Jordan Telecom which is 40% owned by France Telecom) and Jordan Mobile Telephone Services Company - Fastlink (wholly-owned by Kuwait/UK MTC-Vodafone). Jordan's Telecommunication Regulatory Commission (TRC) has initially licensed Umniah Telecommunications Company as the third mobile operator.

Around 67% of Jordan's mobile phone customers subscribe to Fastlink with the remainder subscribing to MobileCom. XPress, Jordan's new Integrated Digital Enhancement Network Technology (iDEN)-based network (radio communication and mobile services) began operation on June 6, 2004. This network uses push-to-talk communications through one-to-one or one-to-many calls that allows group communications of up to 100 subscribers with a push of a button, in addition to ordinary mobile services.

According to FY 2003 figures, Jordan has 866,000 GSM/Cellular subscribers, resulting in 16.7 GSM subscribers per 100 inhabitants, 56.6% of total telephone subscribers are GSM subscribers. Jordan has 680,000 fixed lines subscribers, resulting in 12.76 - fixed line subscribers per 100 inhabitants. Growth of subscriber 1995-2002 is 102.9%. Total number of internet users 234,000, users per 10,000 inhabitant is 451.56, estimated number of PCs per 100 inhabitant is 3.28

For further information on the above market sectors, contact Muna Farkouh, Commercial Specialist, at the U.S. Commercial Service office, U.S. Embassy in Amman.

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Best Prospects for Agricultural Products

Jordan is self-sufficient in a number of agricultural products, but still imports basic items such as wheat, barley, corn, dairy products, sugar, red meat, rice and legumes.

Wheat

(In USD Millions)	2002	2003	2004*
Total Market Size	74.0	161.0	130.0
Total Local Production	18.0	7.0	3.0
Total Exports	0	0	0
Total Imports	56.0	154.0	127.0*
Imports from the United States	36.0	35.0	35.0

Wheat is Jordan's largest crop in terms of land cultivated. During 2003, Jordan imported 700,000 tons of wheat estimated at USD 161.0 million. Jordan's major suppliers were the Czech Republic, the United States, and Russia, which accounted for 36%, 23% and 18% respectively of its total imports. Other suppliers were Germany, which supplied 7%, and Ukraine, which supplied 5% of Jordan's total imports. Jordan only imports hard red winter wheat no. 2 or its equivalent.

* Import figure for 2004 is estimated by FAS office in Amman.

Barley

(In USD Millions)	2002	2003	2004*
Total Market Size	44.7	55.0	70.0
Total Local Production	6.0	2.0	1.0
Total Exports	0.0	0.0	0.0
Total Imports	44.0	53.4	69.0
Imports from the United States	6.0	0.0	0.0

Barley is Jordan's second largest crop. In 2003, Jordan imported 561,041 tons of barley worth USD 53.4 million. Major suppliers were Syria, Turkey and Iraq, which supplied 77%, 13% and 10% respectively. Since Jordan faces drought, it is expected that imports of barley will increase.

Maize (Corn)

(In USD Millions)	2002	2003	2004*
Total Market Size	63.5	73.0	70.0
Total Local Production	0.0	0.0	0.0
Total Exports	0.0	0.0	0.0
Total Imports	57.0	73.0	70.0
Imports from the U.S.	6.5	15.0	25.0

Jordan's locally produced corn is used mostly as corn-on-the-cob for human consumption. Consumption of corn as feed for poultry is approximately 40 tons monthly. During 2003, Jordan imported 513,098 tons estimated at \$73 million. Major suppliers were Argentina, the United States, and Brazil, which supplied 77%, 21% and 3% respectively of total imports. U.S. Market share has increased due to the U.S.-Jordanian Free Trade Agreement and the U.S. Grain Council's effort was successful in opening up discussion on corn quality and why Jordanians should pay a premium for Argentinean corn.

Corn is imported in bulk and by the private sector.

US corn is duty free because of the U.S. - Jordanian Free Trade Agreement while Argentinean corn is subject to a 5.2% duty.

Rice

(In USD Millions)	2002	2003	2004*
Total Market Size	46.0	50.0	50.0
Total Local Production	0.0	0.0	0.0
Total Exports	0.0	0.0	0.0
Total Imports	39.0	50.0	50.0
Imports from the U.S.	7.0	11.0	15.0

Jordan is a medium grain rice market. Imports in 2003 were estimated at \$50 million. Major suppliers were Australia, Egypt and the United States, which accounted for 31%, 28% and 21% respectively of total supplies. Among other suppliers of medium grain rice were Italy and Spain. Annual imports of parboiled long grain and basmati rice are in the range of 15,000 metric tons. Major suppliers are the United States, India, Pakistan and Thailand.

Rice is imported by the private sector. Importers of U.S. rice face tough competition mainly from Australia and Egypt. Currently, medium grain rice is imported in 2, 5, 25 and 50 kilograms bags.

*Source: Jordan Statistics Department

Since Jordan is facing drought, imports of wheat and barley will increase.

Privatization

Most public enterprises with a total estimated value of JD 1 billion are slated for privatization over the coming years. They include:

Electricity: The electricity sector in Jordan is being privatized. It was unbundled from the vertically integrated state owned utility, National Electric Power Company (NEPCO) into three legally and financially independent operating companies and elements in 1999.

CEGCO: Central Electricity Generating Company (generation, partial privatization) - a 1.636 MW plant is currently owned 100% by the government, with privatization sought for 60%. CEGCO is responsible for all generated power in Jordan. (Its biggest power plants include the 656MW Aqaba Station, the 396 MW Hussein plant and the 260 MW Rehab stations). Privatization Status: in process

NEPCO: National Electric Power Company (transmission and Electricity Distribution, government) – maintains ownership of transmission assets, but relying on power generation and privatizing existing generation assets. There are 3 Electricity distribution company in the country:

EDCO: Electricity Distribution Company (distribution) - a distribution and supply company serving south and west of Jordan, is currently owned 100% by the Jordanian government, with privatization sought at 100%

JEPCO: Jordan Electric Power Company - a distribution and supply company serving greater Amman and Central Jordan and is privately owned.

IDECO: Irbid District Electricity Company - a distribution and supply company currently owned 55.4% by the Jordanian government, of which the government intends to sell its entire stake. IDECO serves northern part of Jordan.

Privatization opportunities are the sale off a 100 percent interest in Electricity Distribution Company and a 55.4% stake in Irbid District Electricity Company.

Telecom:

The remaining 50% shares of Jordan Telecom (selling a portion of the government share in JT through the stock market)

Aviation/Airports:

- Queen Alia International Airport landside operations (ground handling, facilities management, retail facilities, car parking, and runway maintenance)
- The Jordan Civil Aviation Authority which will be divided to five cost centers:
 - Standards and regulation
 - Airports
 - Air Navigation Service
 - Corporate Activities
 - The Queen Noor Technical College for Civil Aviation

The remaining holdings of the Jordan Investment Corporation portfolio, which include:

- Jordan Phosphate Mines Company (ongoing)
- Jordan Postal Services
- Jordan General Silos & Supply Company
- Royal Jordanian Airlines
- Royal Jordanian Training Center
- Jordan Aircraft Maintenance Limited (JorAMCo) [in process]
- Jordan Air Motive Limited Company (JALCo) [in process]
- Aqaba Railway Corporation
- Customs Department Warehouses

In parallel, the government is negotiating private sector participation (BOT) basis in large number of potential investment projects, including:

- Development of Abdali
- Development of Zarka
- Development of the East coast of the Dead Sea
- Aqaba Special Economic Zone

For updates about business opportunities and detailed information about privatization, U.S. companies are encouraged to visit **www.epc.gov.jo**

Please Note: Country Commercial Guides are available to U.S. exporters on the website: <http://www.export.gov>. They can be ordered in hard copy or on diskette from the National Technical Information Service (NTIS) at 1-800-553-NTIS.

U.S. exporters seeking further recommendations for trade promotion opportunities in Jordan and country-specific commercial information may also wish to visit the website of the U.S. Commercial Service in Jordan at www.buyusa.gov/jordan

Travelers may wish to obtain the most recent travel advisory from the U.S. Department of State at www.state.gov

U.S. exporters seeking general export information/assistance or country-specific commercial information should consult with their nearest **Export Assistance Center** of the **U.S. Department of Commerce's Trade Information Center** at (800) USA-TRADE, or go to one of the following websites: www.usatrade.gov or www.tradeinfo.doc.gov

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